REMARKS

Claims 1-9 are pending in this application. Claims 1 and 7 were amended in this response. No new matter has been introduced as a result of the amendments.

Claims 1-4, 6 and 7 were rejected under 35 U.S.C. §102(b) as being anticipated by *Budnik* (US Patent 6,043,707). Claims 5, 8 and 9 were rejected under 35 U.S.C. §103(a) as being unpatentable over *Budnik* (US Patent 6,043,707). Applicant traverses these rejections. Favorable reconsideration is respectfully requested.

Specifically, none of the cited art, alone or in combination disclose "compensating for any nonlinearity of the transmission amplifier via a predistortion unit for data values in an input data stream, wherein the supply voltage is reduced to an extent to which a quality of predistortion factors for the compensation for the nonlinearity of the transmission amplifier is increased by the predistortion unit" as recited in amended claim 1, and similarly recited in amended claim 7. Support for the amendments may be found in the present specification on pages 2, lines 9-16 and page 5, line 29 – page 6, line 20.

As was argued previously, claim 1 recites that the power transmission amplifier is operated in a non-linear mode if the quality of the digital predistortion is acceptable. If the operation of the transmission amplifier initiates or has been influenced by a change in the operating parameters, the transmission amplifier is operated in a linear mode. Accordingly, it follows that a quality factor for the compensation of the non-linearity of the trans-mission amplifier is monitored throughout, and if the quality is acceptable, the operation mode of the amplifier is non-linear. The linear mode is preferred in cases in which the digital pre-distortion does not work well due to external influences in connection with its time constant to compensate for non-linear behavior of the transmission amplifier. Claims 1 and 7 have been amended in this response

Budnik discloses a configuration (FIG. 8), where, at low envelope amplitudes, programmable attenuator 52 is set to a very high attenuation (no signal transmission) to a summer 42, while simultaneously the digital predistortion block 1 maps the supply voltage 207 to a low constant value and the bias to class A, AB, or B linear operation, dependent upon

linearity/efficiency trade-offs desired. A programmable attenuator 51 is set to low attenuation at this time, such that essentially all of the amplitude linearity correction feedback is applied to the forward path 202 via an amplitude modulator 2, and none to an amplitude modulator 43 (col. 6, line 51 – col. 7, line 9).

At intermediate envelope amplitudes the digital predistortion block 1 continues to map the bias to a linear mode of operation (such as class AB), but begins to map the supply voltage such that it tracks the RF envelope with a fixed offset sufficient to guarantee that the amplifier is not operated in compression (col. 7, lines 10-23).

As power is increased to high levels, the bias path 205 is altered to bias the RF PA 6 into a nonlinear class of operation. Also, the digital predistortion block 1 begins to form the actual envelope through the supply modulation path 206, with the RF PA 6 driven into compression. The signal transmission level through the attenuator 52 is increased and the signal through the attenuator 51 is reduced, such that nearly all amplitude corrective feedback is applied to the envelope (supply) modulation path 206 and very little to the forward RF path 202, since the highly nonlinear classes of operation are largely unresponsive to amplitude variations in the path 202 (col. 7, lines 24 - 38).

Budnik also teaches that predistortion correction performs an inverse amplitude and phase correction ahead of the amplifier such that the desired output is achieved. Fixed predistortion utilizes a fixed mapping based on typical measured characteristics, whereas adaptive digital predistortion periodically transmits a training signal, which is fed back to a signal processor which adjusts the mapping over time (col. 1, lines 47-54). In col. 6, lines 33-37, *Budnik* merely describes that feedback path 209 is utilized exclusively for adaptive predistortion for mapping supply level and bias amplitude. Only the envelope levels indicating signal strengths are monitored to control a bias voltage of the power amplifier.

Accordingly, the transmission amplifier disclosed in *Budnik* only operates in a non-linear mode only when high power input signals are detected. The digital predistortion in *Budnik* is disclosed as changing between low and intermediate envelope amplitudes on one side and high envelope amplitudes on the other side (see FIG. 6 and associated text). Thus, *Budnik* only

monitors the power level of the input signals to be transmitted and amplified by the transmission amplifier and not the quality of pre-distortion as recited in the present claims. The present claims teach that as soon as the quality of the compensation for non-linearity is sufficient, the operation mode of the transmission amplifier is altered from linear to non-linear mode. Accordingly, applicants submit that the rejections under 35 U.S.C. §102(b) and 103(a) are improper and should be withdrawn.

With regard to the *Khanifar* reference, the Applicants maintain that the present application claims priority to European Patent Application 02015954.7 which has a priority date of July 17, 2002. Since this date predates the earliest filing date for *Khanifar*, it is submitted that the reference does not qualify as prior art and should thus be removed from consideration. A translated copy of the document will be provided in due course.

Accordingly, Applicants respectfully submit that the patent application is in condition for allowance and request a Notice of Allowance be issued. The Commissioner is authorized to charge and credit Deposit Account No. 02-1818 for any fees associated with the submission of this Response, including any time extension fees. Please reference docket number 112740-846.

Respectfully submitted,
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